



Monitoring Rangeland Grazing

U S DEPARTMENT OF THE INTERIOR • BUREAU OF LAND MANAGEMENT

BLM LIBRARY
SC-324A, BLDG. 50
DENVER FEDERAL CENTER
P. O. BOX 25047
DENVER CO 80225-0047

WHAT IS MONITORING?

For range management, monitoring means observing and recording grazing use and natural events that occur on the range, and what happens to range vegetation as a result of these actions. Changes in vegetation are compared to range management objectives to see if management practices are working as expected.

WHY MONITOR?

Good grazing management uses recorded observations to improve the following year's grazing practices. Where public land is involved, good records can be used to show that public rangeland management objectives are being achieved.

WHO SHOULD MONITOR?

Anyone who owns, manages, or is interested in grazing land and livestock can benefit from monitoring. Public rangeland monitoring should be a joint venture between the public and the Bureau of Land Management.

GETTING STARTED

Where public land is involved, BLM managers and the livestock operator should cooperatively develop objectives and monitoring methods. The first and most important step is to set realistic objectives. Is the objective to maintain the vegetation that is there now, to increase total vegetation production, or to increase the production of one particular plant species within the total vegetation community? The objectives should be based upon BLM land use and allotment management plans (AMP), and livestock production goals. Once the objectives are developed, monitoring observations will tell if progress is being made or if the objectives were unrealistic.

NEEDLE

-AND-

THREAD

PER
CENT

UTIL-
IZATION

0

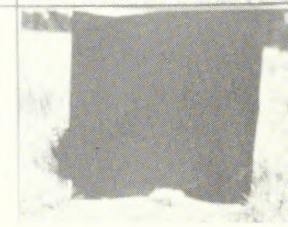
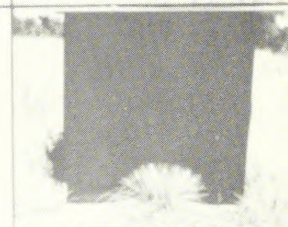
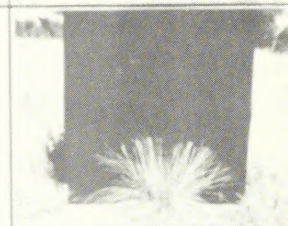
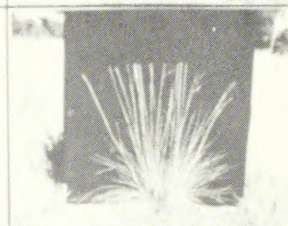
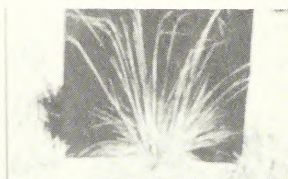
10

30

50

70

90



Grass utilization can be judged by estimating how much of the current year's plant growth has been consumed. Proper utilization levels should be based upon management objectives.

THE MONITORING PROCESS

The kinds of information needed to measure progress in meeting range management objectives may vary from area to area. However, basic information is needed to make sound decisions about any grazed area. This basic information includes short-term or annual events and their immediate effects on vegetation, and longer term vegetation trends.

Short-Term Monitoring. A record of what took place on the entire allotment during the grazing year includes the following items:

1. **Actual Use Record** How many animals grazed in each pasture of the allotment? What kind or class (cattle, sheep, horses; mother cows, steers, yearlings, etc.)? Exact turn out and gather dates by kind and class?
2. **Utilization (Grazing Use Record)** A map or sketch of where and how intensively the allotment or pasture was grazed. Show places that were not grazed enough and those too heavily grazed. Include normal grazing areas for big game and wild horses or burros. Estimate the degree of utilization by a percentage and show it on the map.
3. **Weather Record** When did storms occur? How much rain or snow fell? Was the coverage general or spotty? If spotty, note pastures or areas that got the moisture. Were there other weather-related events such as a late spring, frost, or dry winds? A general statement of growing conditions may prove useful. Was it a good, average, or poor forage production year?

Long-Term Monitoring. This involves measuring or documenting changes occurring in *important resource characteristics* of the allotment. This record is tied to a few selected locations on the allotment where permanent photo points and/or transects can be used to document change over time (trend). These trend studies should be selected to show progress towards the objectives in the AMP or grazing plan. Photo points and transects might be established to document such trends as increases or decreases in certain important forage species or undesirable plant species

(e.g., perennial grasses or halogeton on an important livestock use area, or bitterbrush on an important winter range.)

1. Trend Photo Points

This photo record may be taken yearly or at longer but regular intervals. Photographs should include a general view of the trend, point, and location, and a closeup of the important resource characteristic being monitored. They should be taken at the same time of year each time.

2. Trend Transects

The photographic record should be supplemented by periodic (3–5 year intervals) sampling or measuring of the resource characteristic being monitored.



A. Zero to light, B. Moderate, C. Severe

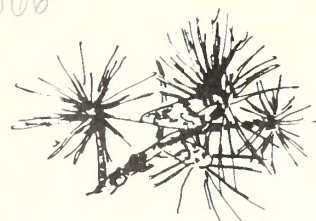
DEGREES OF HEDGING

Browse utilization can be assessed by estimating how much of the current year's leader growth has been taken and how much a shrub is hedged.

#1624630.7

ID: 86017866

SF
853
M6647
1987



These photo guides to utilization levels developed by Dr. Ervin Schmutz of the University of Arizona is an example of the aids available for use in estimating grazing intensity on grasses for the grazing use record.

SQUIRREL -TAIL PER CENT UTIL- IZATION	0		WESTERN WHEAT- GRASS PER CENT UTIL- IZATION	0	
	10			10	
	30			30	
	50			50	
	70			70	
	90			90	

Using Monitoring Information

Two types of interpretations are needed. The first type is interpreting information from the annual monitoring effort (annual allotment assessment) to make decisions about how grazing will be done the next season. Decisions should be made jointly as to how any grazing problem that occurred during the current year can be corrected or avoided next year.

The second type of interpretation is the periodic

(3-5 year) review of documented long-term changes (trend) and the determination of cause for these changes. The second interpretation requires a review of the annual record (events) to define or explain why the documented changes occurred.

These interpretations of cause and effect make possible an objective evaluation of whether the AMP or grazing plan works or needs revision, or whether the original allotment objectives were realistic and practically attainable.

GETTING THE JOB DONE

The entire process of range monitoring should be simple and straightforward. The field work should include enough time to jointly inspect the allotment, make and record the observations, and discuss range events of that season.

It is particularly important that the grazing use record (utilization map) of the allotment be developed jointly. This should be done during an annual allotment ride or tour at the end of the grazing season to ensure good range management decisionmaking.

On public land, monitoring done by the livestock operator and the agency range manager working side-by-side is the ideal situation. However, sometimes they can obtain or collect certain information more readily if they work independently. For example, livestock numbers and turn-out dates are normal management needs to the livestock operator, while vegetation trends and normal wildlife use areas are needed by the BLM land manager.

The BLM manager and the livestock operator may develop a monitoring plan for an allotment where individuals contribute that information easily available to them, collect certain information jointly, and analyze that information jointly. Continuity is essential. Any information provided by a permittee can be used to supplement agency information.

SOURCES OF ASSISTANCE

Information and assistance are usually available through local offices of the Bureau of Land Management, Cooperative Extension Service, Soil Conservation Service, and Forest Service. These offices also may be able to provide training opportunities through workshops or field demonstrations. Interagency committees in several States have developed good monitoring guides.



Acknowledgments

Dr. Wayne Burkhardt, University of Nevada, Reno, Nevada
Dr. John Butcher, Utah State University, Logan, Utah
John L. (Jack) Artz, USDA Extension Service, Washington, D.C.

